

# Division of Civil, Mechanical and Manufacturing Innovation (CMMI) Overview

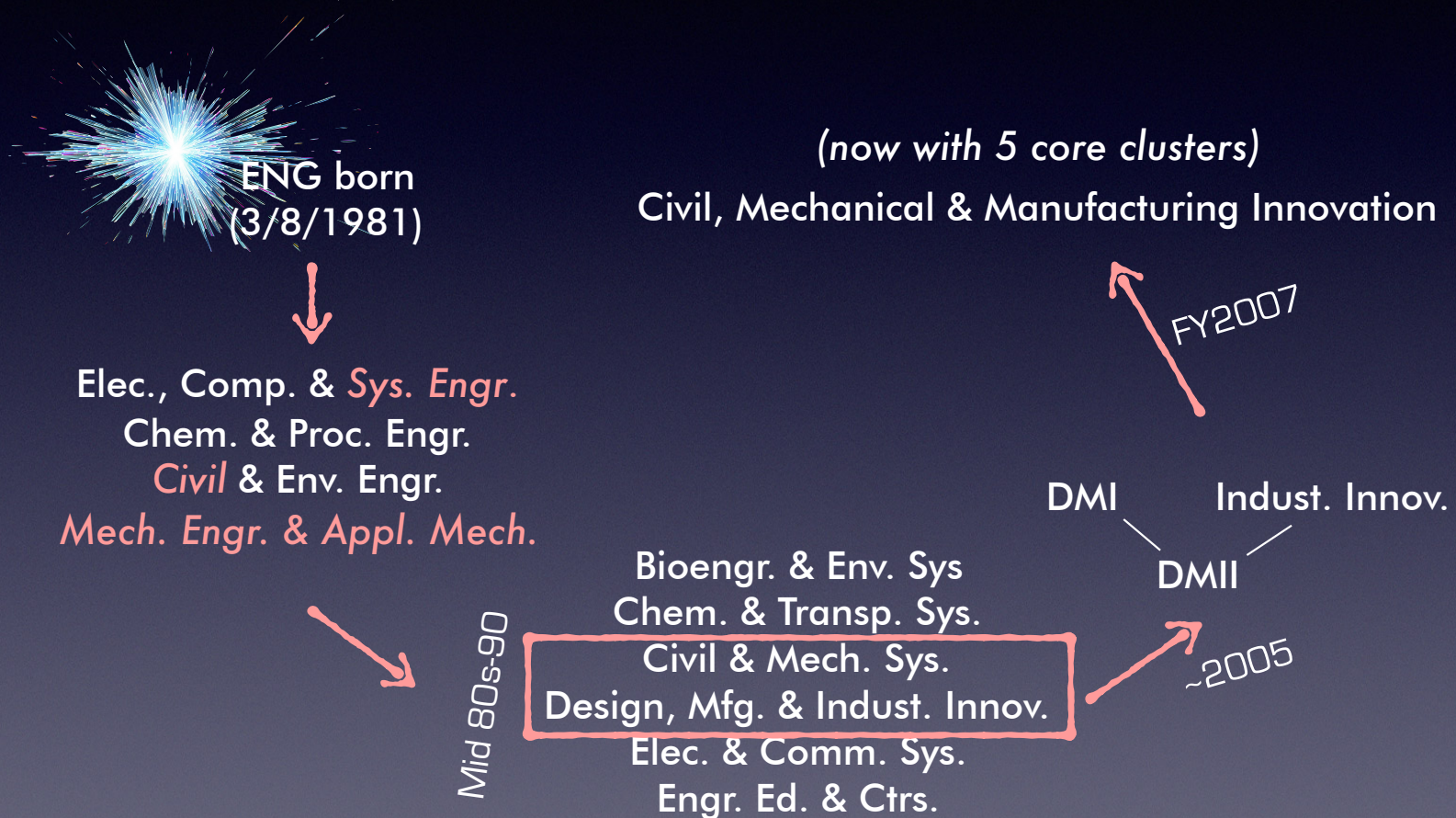
24-October-2019



# ORIGIN STORY



# ◀ Path Before





▶ **PRESS PLAY**

# **PRESENT PATH**

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Bev Corley  
Terria Davis  
Tracy Scott



Brigid Mullany\* • Khershed Cooper • Andy Wells • Future hire(s)



## Advanced Manufacturing

Irina Dolinskaya\* • Robert Landers • Jordan Berg • Robert Scheidt



## Dynamics, Control & Cognition

Joy Pauschke\* • Rick Fragasy • Caglar Oskay



## Engineering for Civil Infrastructure

Siddiq Qidwai\* • Nakhiah Goulbourne • Laurel Kuxhaus



## Mechanics & Engineering Materials

Georgia-Ann Klutke\* • Walt Peacock • CIS Future Hire • Andy Dong • EDSE Future Hire



## Operations & Design

Miriam Scheiber • Kevin Webster • Future Analysts



- Analyst Team



Alexis Lewis  
- Data Infrastructure



Jack Meszaros  
- Data Infrastructure



Bruce Kramer  
- Senior Advisor



Jo Culbertson  
- Integrative Activities

Rob Stone  
Division Director



Mary Toney  
Deputy Division Director



Veronica Calvo  
- Operations Specialist/  
Administrative Officer



Tom Moynihan  
- Program Support  
Manager



Joy Minor  
David Nyiro  
Mya Praileau



## Mission Support

DIVISION OF CIVIL, MECHANICAL & MANUFACTURING INNOVATION



# Core CMMI Programs:

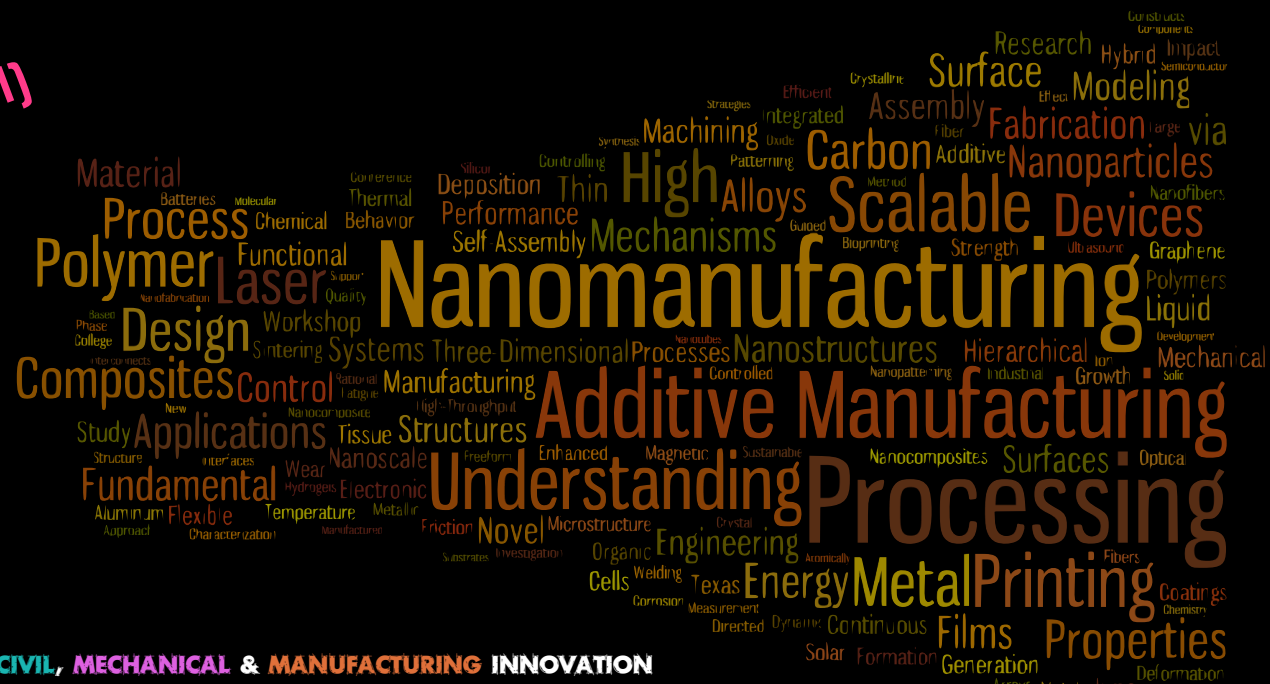
- Support the integration of research and education in all of its programs
- Promote creation, development and application of next-generation theories, tools, and models
- Integrate computation, data analysis and interdisciplinary research partnerships and perspectives for the advancement of knowledge



# Advanced Manufacturing:

- Manufacturing and building technologies across size scales from nanometers to kilometers, with emphases on efficiency, economy, and minimal environmental footprint.

Cluster/Program:  
● Advanced Manufacturing (AM)



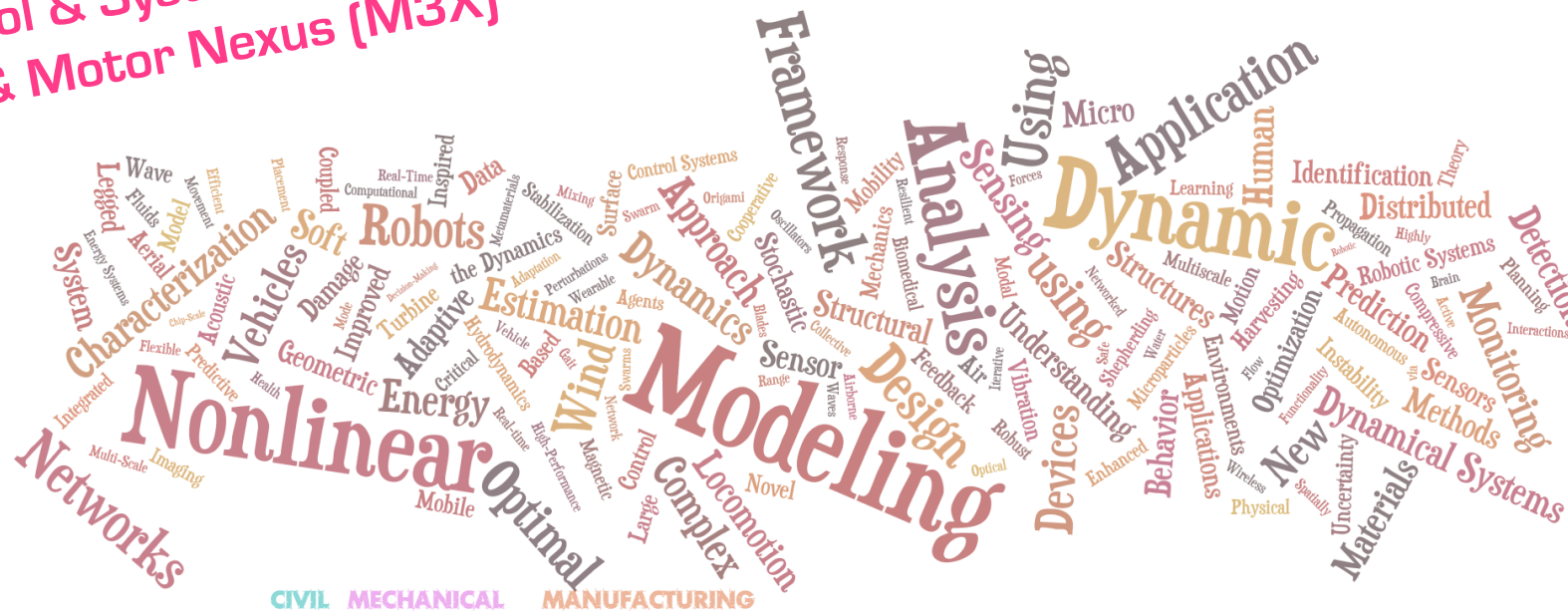
DIVISION OF CIVIL, MECHANICAL & MANUFACTURING INNOVATION

# Dynamics, Control & Cognition:

- Advances in the creation of models, analyses, and algorithms that link data with decisions related to manufacturing and service enterprises.

**Programs:** Dynamics, Control & System Diagnostics (DCSD)  
Motor Nexus (M3X)

- Dynamics, Control & System Design
- Mind, Machine & Motor Nexus (M3X)



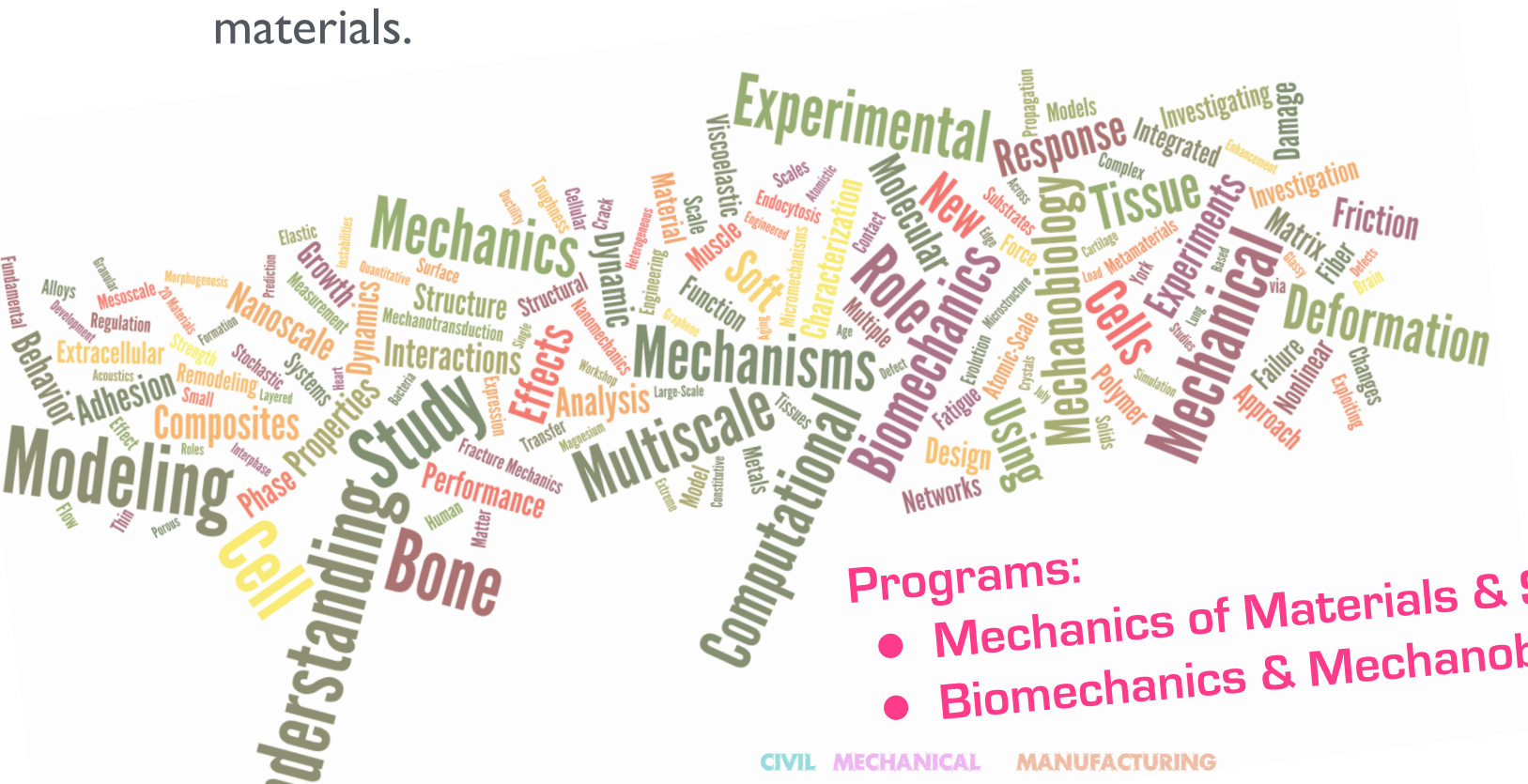
**CIVIL MECHANICAL MANUFACTURING**





# Mechanics & Engineering Materials:

- Efficient, economical and sustainable transformation and use of engineering materials.



## Programs:

- Programs:
- Mechanics of Materials & Structures (MOMS)
  - Biomechanics & Mechanobiology (BMMB)

CIVIL MECHANICAL MANUFACTURING



# Operations & Design:

- Design, control, and optimization methods applied at levels ranging from component to enterprise systems.

Programs:

- Civil Infrastructure Systems (CIS)
- Engineering Design & Systems Engineering (EDSE)
- Humans, Disasters & Built Environment (HDBE)
- Operations Engineering (OE)





 **FAST FORWARD**

**PATH AHEAD**





# CMMI LEADERSHIP

Navigating the New Arctic



Dartmouth (1824687)

Future Work - HTF



- Interdisciplinary topics within CMMI and between other programs/divisions/directorates
  - NSF Big Ideas
  - Disrupting Illicit Supply Networks – 2 rounds of DCLs



# Natural Hazards Engineering Research Infrastructure (NHERI)





## Leading Engineering for America's Prosperity, Health and Infrastructure (LEAP HI)



- > \$1-2 million for up to 5 years.
- > Intellectual challenge and societal impact.
  - Economic competitiveness
  - Quality of Life
  - Public Health
  - Essential Infrastructure
- > Goals not achievable by smaller projects
- > CMMI core topic(s) at heart of proposal
- > Inclusion of non-CMMI expertise encouraged
- > Highlights importance of engineering research
- > Well integrated research plan





**THANK YOU!**



# CMMI Cast

## *Program Specialists:*

Beverly Corley  
Terria Davis  
Carolyn McKinnon-Jones  
Joy Minor  
David Nyiro  
Candace Owens  
Mya Praileau  
Shareenne Scott  
Tracy Scott

## *Program Support Manager:*

Tom Moynihan

## *Operations Specialist/ Administrative Officer:*

Veronica Calvo

## *Program Directors:*

Jordan Berg  
Kershed Cooper  
Jo Culbertson  
Irina Dolinskaya  
Rick Fragaszy  
Nakhiah Goulbourne  
Georgia-Ann Klutke  
Laurel Kuxhaus  
Robert Landers  
Alexis Lewis  
Jack Meszaros  
Brigid Mullany  
Caglar Oskay  
Joy Pauschke  
Walt Peacock  
Siddiq Qidwai  
Bob Scheidt  
Andy Wells

## *Science Analysts:* Coming Soon!

*Program Analysts:*  
Miriam Scheiber  
Kevin Webster

## *Experts & Intermittent:* Andy Dong

*Senior Advisor:*  
Bruce Kramer

*DDD:*  
Mary Toney

*DD:*  
Rob Stone